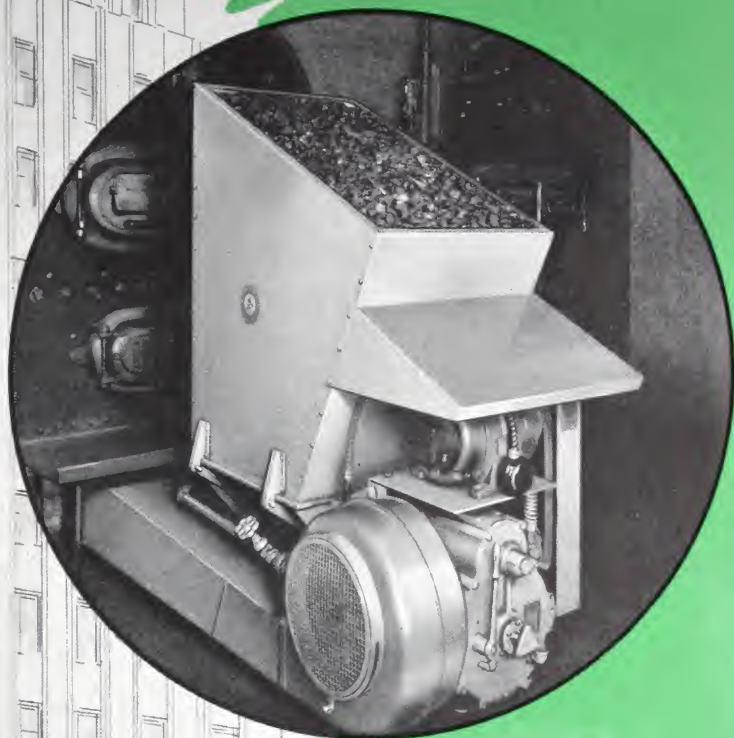


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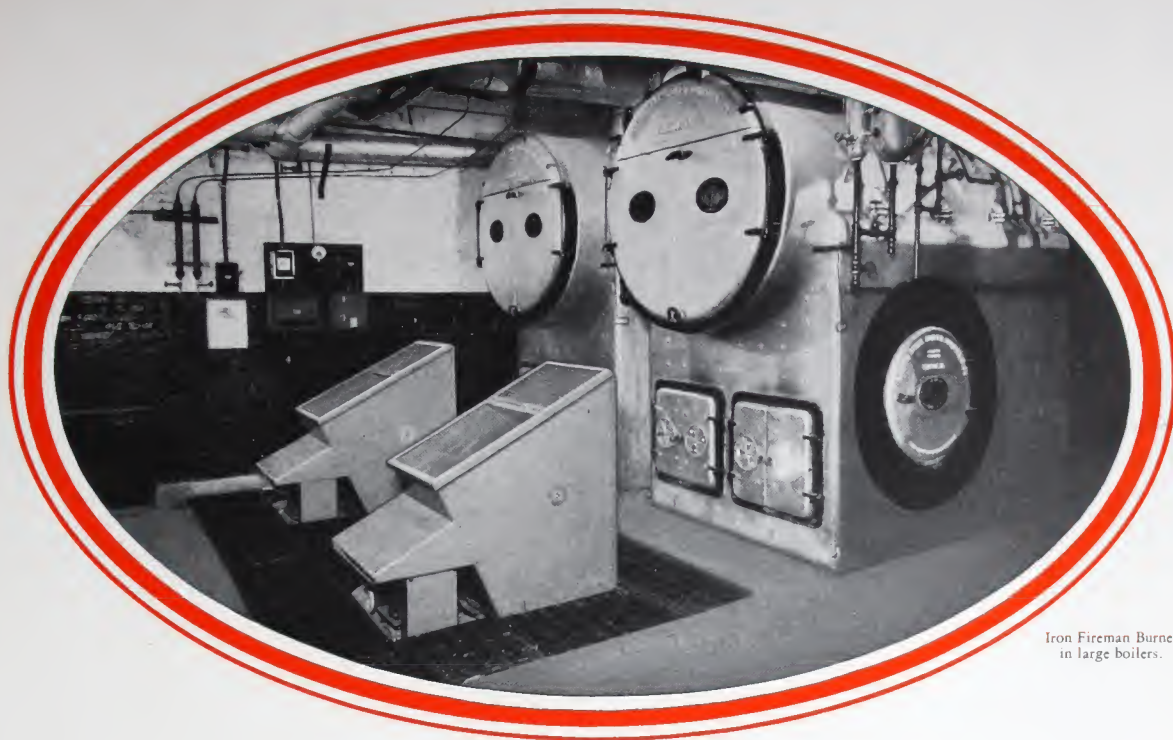
IRON FIREMAN

FOR HEATING



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IRON FIREMAN MANUFACTURING COMPANY
Printed in U. S. A. F 3903

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APR. 1936. 107



Iron Fireman Burners
in large boilers.

Iron Fireman Firing for Commercial Heating Plants

ONE of the most important changes which the last decade has brought about is the development of automatic coal firing by the Iron Fireman organization and its adoption by businesses, institutions, buildings and homes. The result is a new and far higher standard of firing efficiency and firing control.

Another result equally important has been drastic reductions in fuel costs. The Iron Fireman Automatic Coal Burner uses coal in its cheapest form and obtains a degree of combustion efficiency so high that it actually creates fire-box temperatures 25 per cent to 50 per cent higher than can be obtained with the same quality of coal when hand-fired. Smoke is eliminated.

Fuel cost savings are enormous—ranging from 15 per cent to 50 per cent (in many cases even greater).

Everywhere coal is recognized as America's permanent fuel supply. It is threatened with no shortage. It is controlled by no monopoly. Only primitive methods of firing have, in the past, detracted from the prestige of King Coal. Scientific automatic Iron Fireman firing has now removed this handicap and coal is again the preferred fuel, unparalleled in safety, in economy, and in the quality of heating which it delivers. The pages which follow explain clearly and concisely the methods by which these results are accomplished.



An Iron Fireman installation in a small
commercial heating plant.

JD 90-01389 HC4

IRON FIREMAN MANUFACTURING CO.



The Iron Fireman plant at 3170 West 106th Street, Cleveland, comprises approximately 4 acres of ground and 120,000 square feet of floor area.



The Iron Fireman plant at 4784 S.E. 17th Avenue, Portland, covers 3 acres of ground and 67,000 square feet of floor space.



The Iron Fireman plant at Toronto, Ontario. A branch of this factory is located at Montreal, Quebec.



The Iron Fireman sales and service department at Chicago.

STOKERS ONLY

This entire nationwide organization is concentrated exclusively on the research, design, engineering, manufacture, sale and service of automatic coal-firing equipment

IN BUYING stoker equipment it is important that the purchaser take into consideration the type of manufacturing organization to which he must look for service, repairs, and the continuance of responsibility for the performance of the stokers themselves.

The Iron Fireman organization makes stokers only. It has grown to its present size and leadership in its field through success in the invention, design, production and sale of automatic coal stokers. First to recognize the dual opportunity of improved firing results and greater firing economy in the field of automatic coal firing, this company was also the first to successfully apply these advantages. Iron Fireman owners in every state in the Union and in many foreign countries are now enjoying

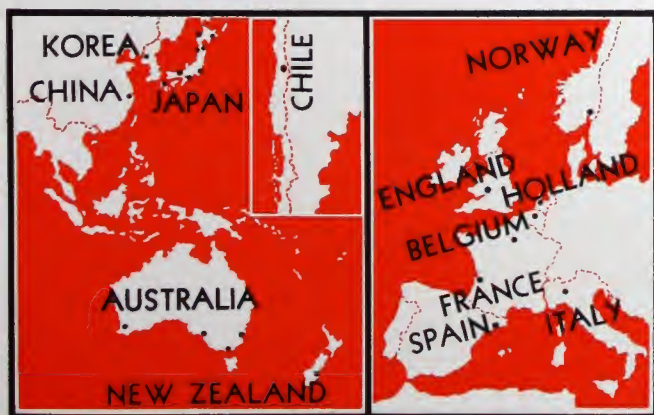


Iron Fireman branches and dealers are located in all parts of the United States and in foreign countries.

the benefits of steady, even firing, automatically controlled, with no smoke nuisance. They are successfully using low cost fuels and obtaining efficiencies so high that their savings over former methods aggregate many millions of dollars yearly.

The Iron Fireman Manufacturing Company recognizes that its continued success rests upon the satisfaction of its customers and to this end spares no effort in providing the best product which can be produced, at the lowest cost consistent with a sound business operation which is capable of insuring a continuance of service to its users.

Reference to the company's rating in Dun and Bradstreet's or to its listing in Poor's or Moody's Manual will indicate its ability to insure service to its customers.



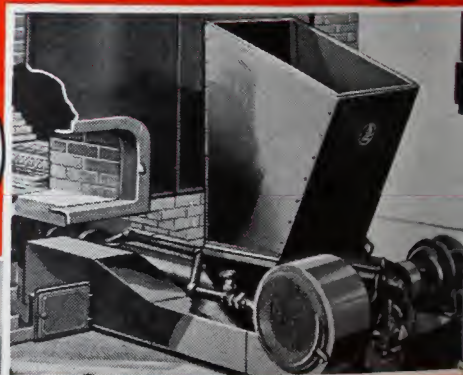
There is an Iron Fireman dealer or distributor in each of the countries shown on the above map.

Pioneering... the

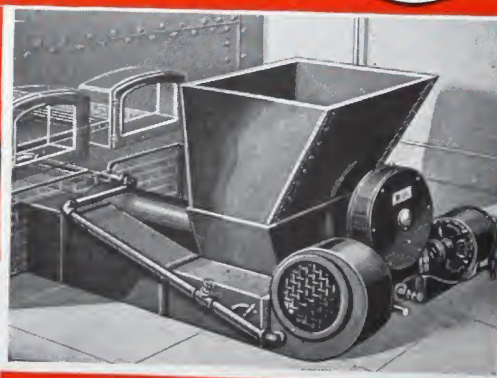
Exceptional performance of Iron Fireman stokers reflects the result of thorough research, broad experience, ample resources

• More than a dozen years of pioneering and leadership in the manufacture of automatic coal burners is illustrated by the Iron Fireman stokers on these pages. From 1923, when the first Iron Fireman stoker was installed, until today, when Iron Fireman owners are numbered in tens of thousands, the policy of this organization has been constantly to improve the design, construction and performance of its product. Year after year Iron Fireman has utilized the full power of extensive resources to maintain Iron Fireman leadership in the industry. Study the pictures shown below. Iron Fireman's 1923 model was a good machine. Many are still in service, giving thoroughly satisfactory results. The 1927 and 1929 machines contained countless improvements over earlier models. Thousands of these stokers are in use today. Although now outmoded by later Iron Fireman stokers, they are very similar to many machines that are offered at the present time. . . Today's Iron Fireman represents the finest mechanical firing unit that it is possible to manufacture. Pressed steel construction has replaced the cast iron of older days. Continuous feed transmission continues to prove its superiority. Open or enclosed hoppers, models which feed direct from bunker or coal bin, duplex belt drive, and a host of other features listed below make Iron Fireman stokers the standard of value in automatic coal firing equipment. Check these features point by point. Satisfy yourself that Iron Fireman is the finest machine manufactured.

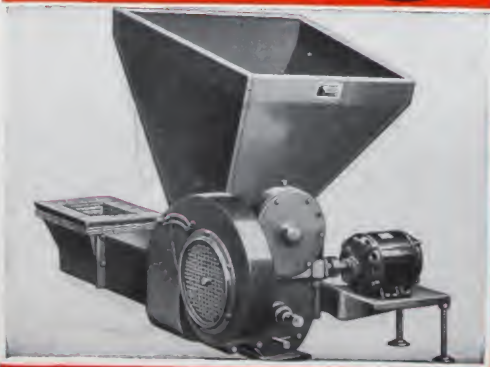
1929



1927



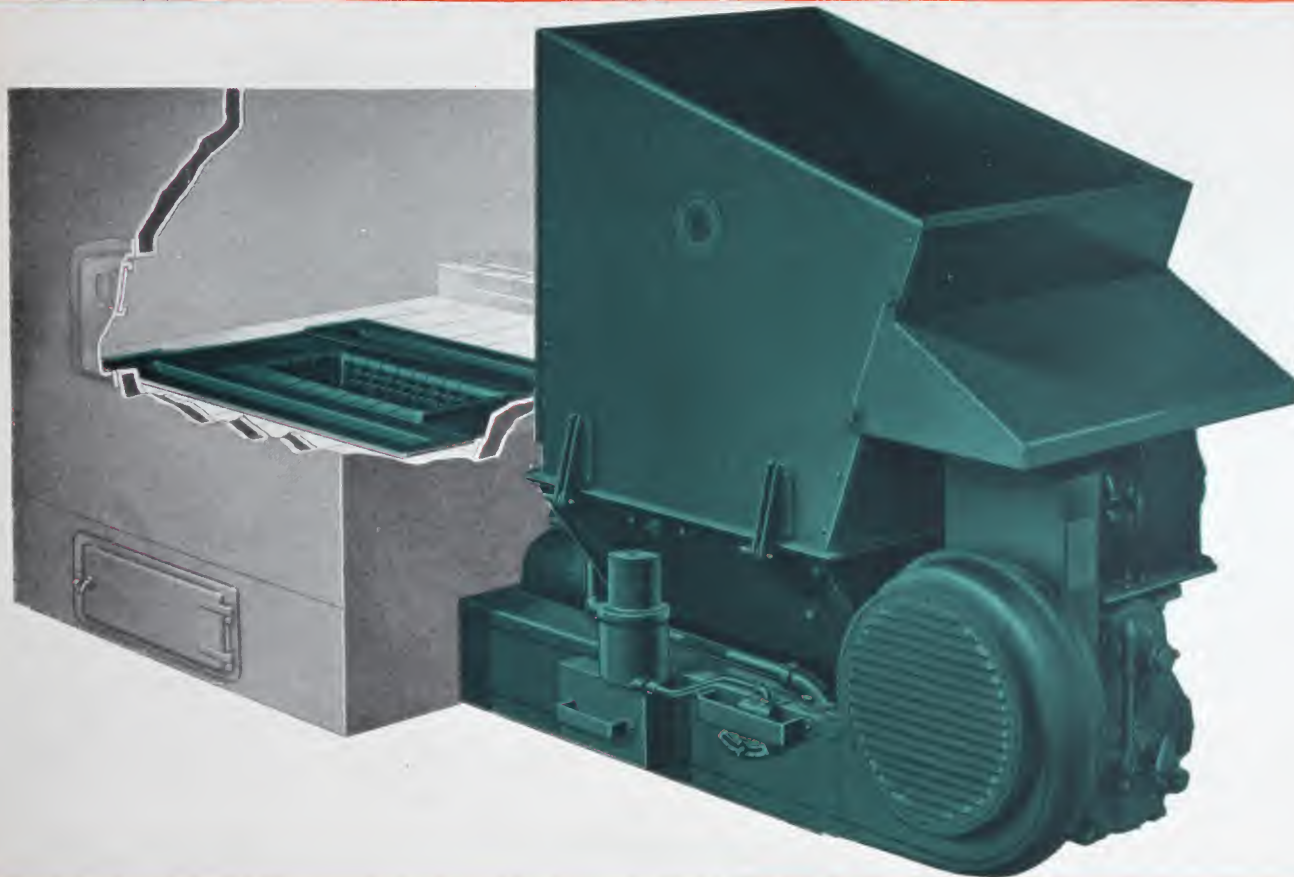
1923



Price of Leadership



TODAY

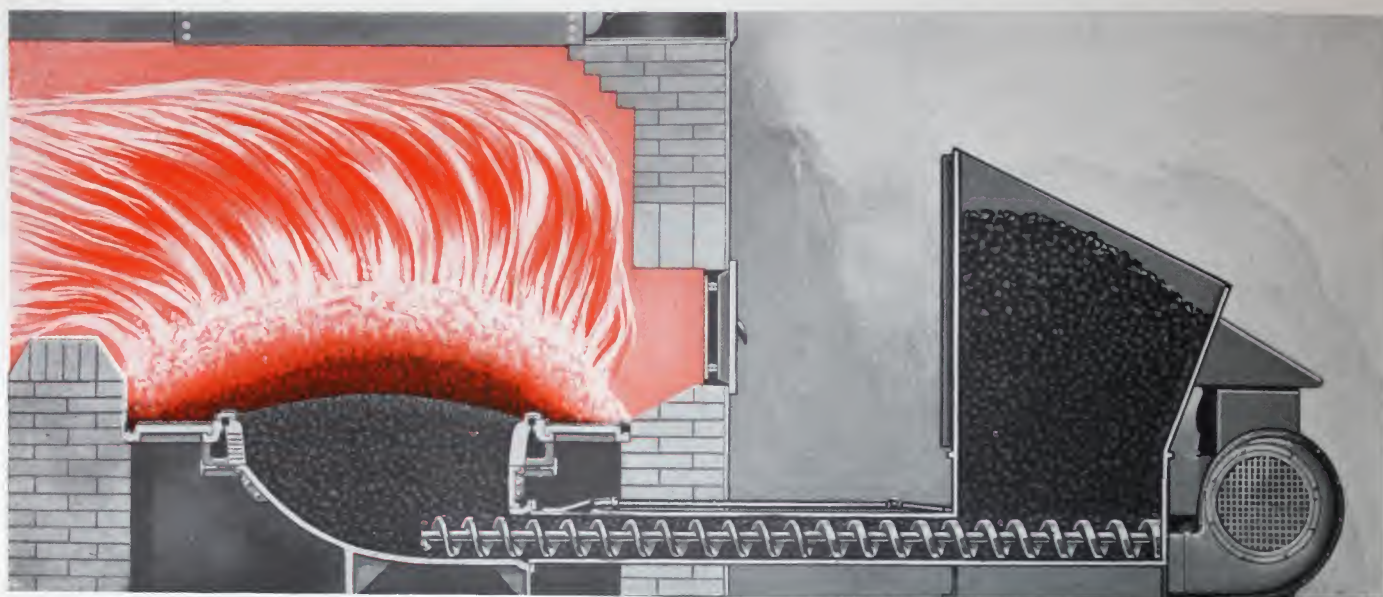


F E A T U R E S O F C O N S T R U C T I O N

Balanced design . . Pressed steel construction . . Continuous feed transmission . . Bunker and bin feed models in all sizes . . Duplex belt drive . . Motor cushioned on rubber . . Protected motor . . Easily accessible shear pin prevents damage to mechanism . . Shear pin alarm . . Centro-balanced rotor fan . . Automatic fire banking damper . . Iron Fireman volumeter insuring uniform air volume . . Pneumatic fume eliminator . . Pressed steel hopper of Iron Fireman patented design . . Enclosed hoppers available on commercial models . . Hinged hopper on commercial and industrial models . . Iron Fireman patented agitator . . Heavy flight feed worm of special alloy steel, cast from one-piece pattern . . Worm housing cleanout . . Scientifically correct retort, venturi tuyeres, and dead plates . . Coal distributor for uniform delivery of low volatile high coking coal into the combustion zone . . Exclusive Iron Fireman controls.

Scientific Coal Carburetion

FIREBOX TEMPERATURES INCREASED 25% to 50%... STEAM PRESSURE HELD



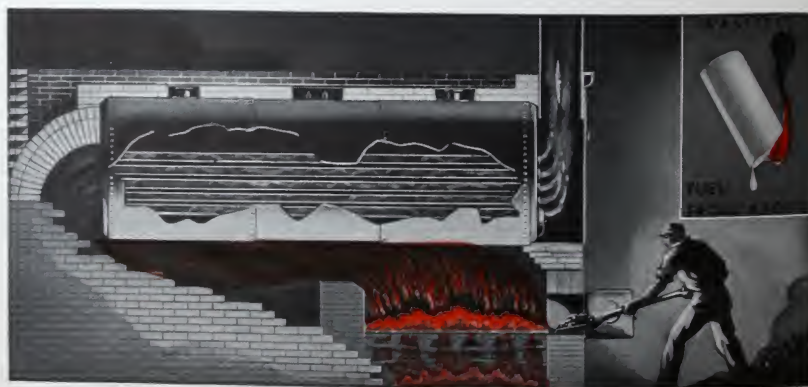
Iron Fireman brings fuel to the zone of combustion in ideal condition, loose and well aerated, enabling it to burn freely and to consume all combustible elements.

IT IS a well known scientific fact that to produce the ideal coal fire, the fuel should be fed in a steady, continuous stream. The volatile gases in the green coal should be distilled off at as low a temperature as possible, in the presence of an excess of oxygen. These gases on their way to the smoke stack should pass through an unbroken layer of incandescent fuel. The fuel bed should not be agitated more than is absolutely necessary.

The Iron Fireman system of feeding and burning coal complies with each of these fundamental requirements. *Non-agitated forced underfiring*, the scientific principle employed by Iron Fireman, is easily understood, and explains how and why Iron Fireman achieves such remarkable savings and betterments.

Green coal is slowly conveyed by a revolving worm from the hopper to the retort, which is directly beneath the incandescent fuel bed. The retort turns the flow of fuel upward, and as the coal approaches the fire, it is gradually heated. The volatile gases are distilled off, and as they pass upward through the incan-

descent fuel bed, are ignited, consumed, and turned into useful heat. Meanwhile the solid residue (now in the form of coke), from which the volatile gases were distilled, is forced upward into the fire and is completely consumed, leaving nothing but non-combustible ash. Since Iron Fireman *forced underfiring* produces firebox temperature from 500 to 1000 degrees hotter than does hand-firing, the loose



HAND-FIRING—HIGH BRIDGE WALL, STACK DAMPER OPEN—SMOKY, WASTEFUL FIRE

In hand-firing, green coal is thrown on top of a hot bed of burning coal. Rarely is it evenly distributed. Quantities of dense smoke, composed of volatiles with high heating value, are distilled off and go up the stack as waste, fouling flues with soot as they go. Unburned and half coked lumps of coal sift through the grates and fall into the ash pit to be shoveled out, representing additional wasted heat value. Fire doors have to be opened constantly, with resulting inrushes of cold air, cooling the boiler and causing back drafts. The hand stoked fire burns at a comparatively low temperature, 1700 to 2000 degrees Fahrenheit, producing quantities of loose ashes. No hand-fired boiler works at top efficiency.

Achieved by Iron Fireman

STEADY... SMOKE NUISANCE ELIMINATED... FUEL COSTS GREATLY REDUCED



OBSERVE WHAT HAPPENS in the process of "forced underfiring." The feed worm forces coal upward, under the fire. Coal is slowly preheated, the gases thus released passing upward through the fire, where they are burned. Coked coal is burned when it reaches the incandescent fuel bed. No smoke nuisance. No fuel waste.



YOU SEE HERE why hand-firing is so wasteful. Green coal is thrown on top of hot fuel bed. Valuable gases are released immediately, and pass up the stack unburned. Air supply is deficient. Unburned coal drops through into ash pit.

ash from nearly all coals is fused into easily removed clinkers, leaving, as loose ashes, only about 25 per cent of the bulk.

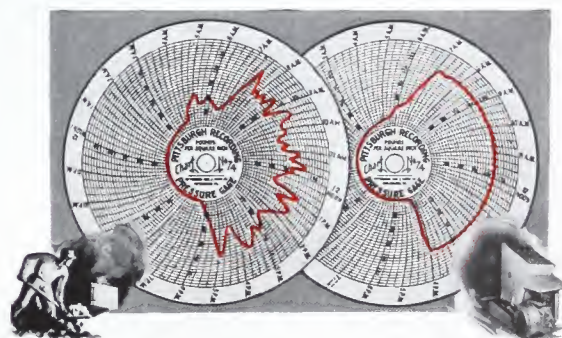
Contrast Iron Fireman *forced underfiring* with hand-firing. In *hand-firing*, green coal is shoveled *on top of the fire*, blanketing the incandescent fuel bed and cooling the fire. As the coal is heated, its volatile gases are distilled off *above* the incandescent fuel bed in the absence of sufficient air. This precipitates black smoke, due to the heavy carbon content of the unburned gases.

Black smoke, thus formed, contains valuable heat units, which with this method of firing go up the stack and are wasted.

Furthermore, the constant opening of the fire doors allows frequent intrushes of cold air, which does not aid combustion, but which chills and cuts down the efficiency of the furnace.

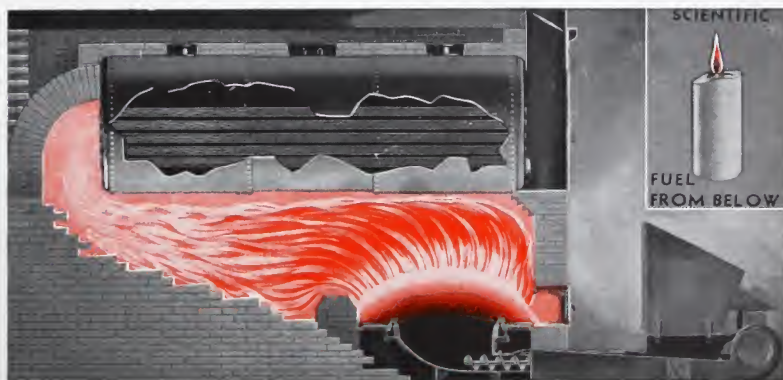
The Iron Fireman is especially designed to burn the smaller sizes of coal, which cost less per ton than larger sizes of the same quality, and extracts more heat per ton from this cheaper coal.

The operation of the Iron Fireman is governed by thermostatic or pressure controls, which start and stop the Iron Fireman automatically, and hold the boiler pressure, or water or room temperature at any desired point.



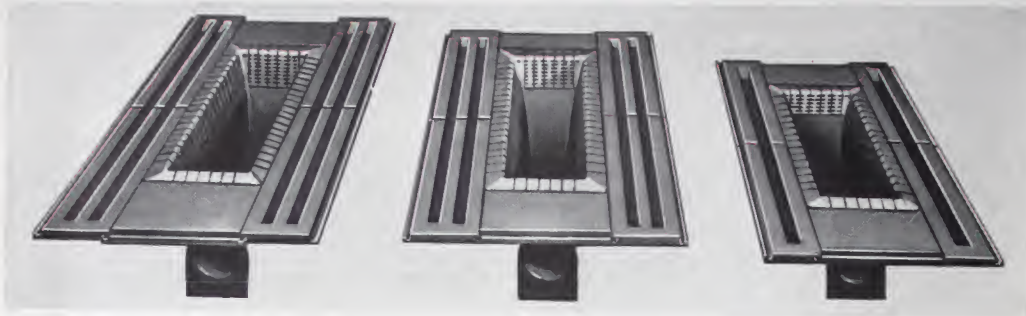
HAND-FIRING
With hand-firing it is impossible to maintain even heat or boiler pressure. Temperatures fluctuate widely.

IRON FIREMAN FIRING
Temperatures do not fluctuate when Iron Fireman does the firing. Heat or boiler pressure is dependable, steady.



IRON FIREMAN—LOW BRIDGE WALL, STACK DAMPER PARTIALLY CLOSED—VERY EFFICIENT FIRE
The Iron Fireman slowly preheats the coal, bringing it up to the flash point as it nears the top of the fire bed. Volatile gases, which ordinarily go up in smoke, are liberated in the retort and are completely consumed. The controlled forced draft generates an intense heat, averaging 2400 to 2800 degrees, F. This consumes everything combustible in the coal, the ash being fused into clinkers which are easily lifted out. An Iron Fireman fired furnace is never choked with coal, nor is the fire allowed to die down. Automatic controls insure the exact fuel supply necessary to produce any desired degree of heat or boiler pressure.

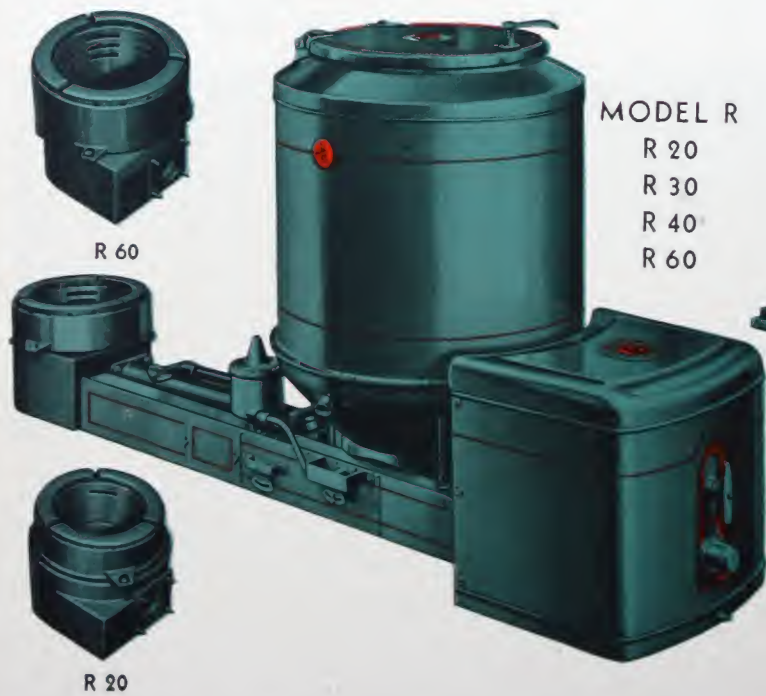
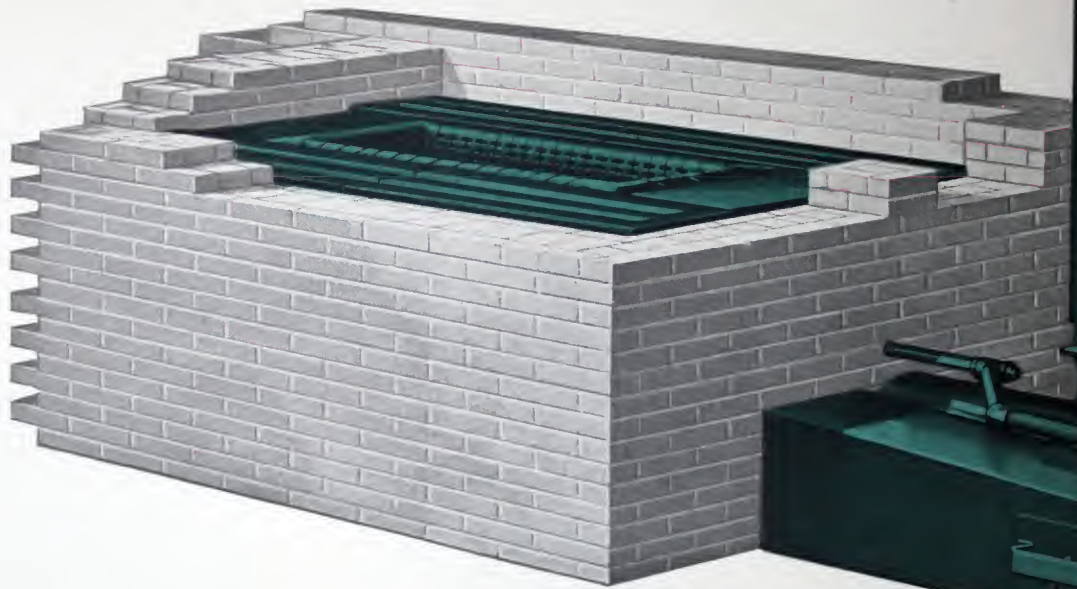
THERE IS AN IRON FIREM



No. 5A

No. 5

No. 4A



MODEL R

R 20

R 30

R 40

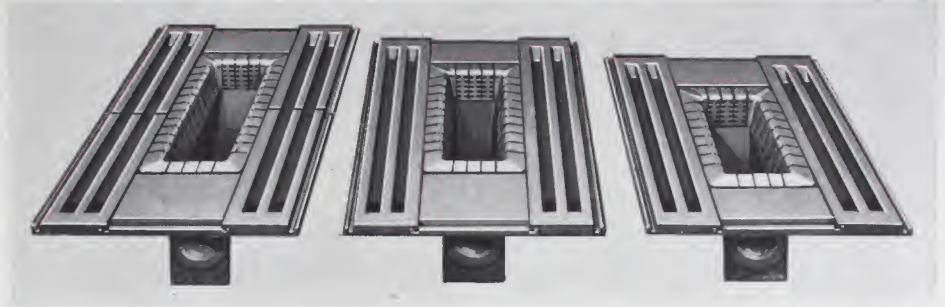
R 60

Jr. 60

R 20

Jr. 40

N FOR EVERY FIRING JOB



No. 4

No. 3

No. 2



INDUSTRIAL

No. 4A

No. 5

No. 5A

COMMERCIAL

No. 2

No. 3

No. 4

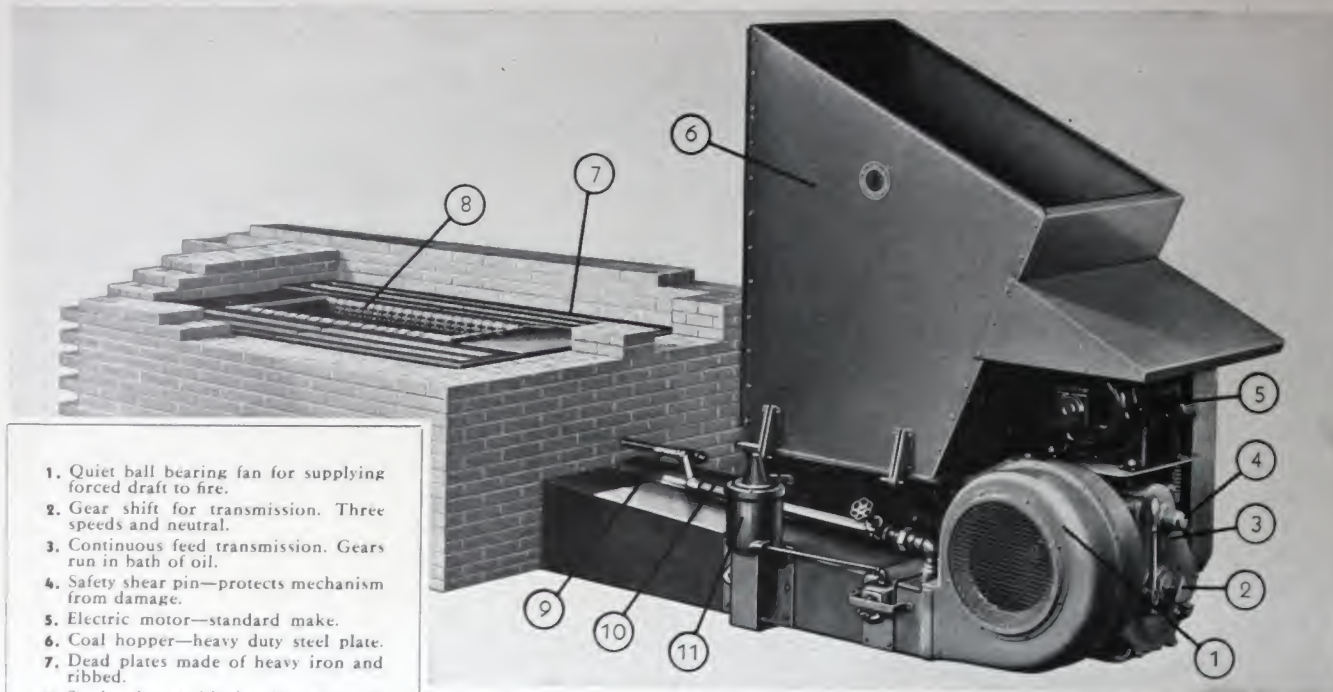
JUNIOR

Jr. 40

Jr. 60

Jr. 90





1. Quiet ball bearing fan for supplying forced draft to fire.
2. Gear shift for transmission. Three speeds and neutral.
3. Continuous feed transmission. Gears run in bath of oil.
4. Safety shear pin—protects mechanism from damage.
5. Electric motor—standard make.
6. Coal hopper—heavy duty steel plate.
7. Dead plates made of heavy iron and ribbed.
8. Sectional tuyere blocks of iron through which air is supplied to the fire.
9. Auxiliary air duct. Insures positive movement of all gases through the fire.
10. Steel housing enclosing feed worm.
11. Volumeter. Supplies exactly the amount of air needed for perfect combustion regardless of fuel bed conditions or type of coal used.

Iron Fireman

The World's Standard Stoker

HERE are shown the elements of construction by which Iron Fireman is able to create a free burning fire in any type of boiler and with practically any type of coal. Each installation is engineered to the particular conditions of the job which it is to serve. This is easily accomplished by men who know how, due to the ample reserves of strength and power which are built into every element, and to the varying details of coal feed and air feed which may be adjusted as needs require.

The quiet three-speed continuous feed transmission operates with a minimum of power and with practically no attention since these gears run in a continuous bath of oil.

The Volumeter described on the opposite page is automatic air volume regulation of the highest type. The conveyor screw is made of a special heat resisting alloy steel developed for this particular use. It is cast in one single piece by an exclusive process developed by Iron Fireman.



A FIRE MUST BREATHE
Iron Fireman creates a well-aerated fuel bed and a free-burning fire.

It is as true and fine as the propellor screw on a battleship. Its strength is far in excess of its working requirements.

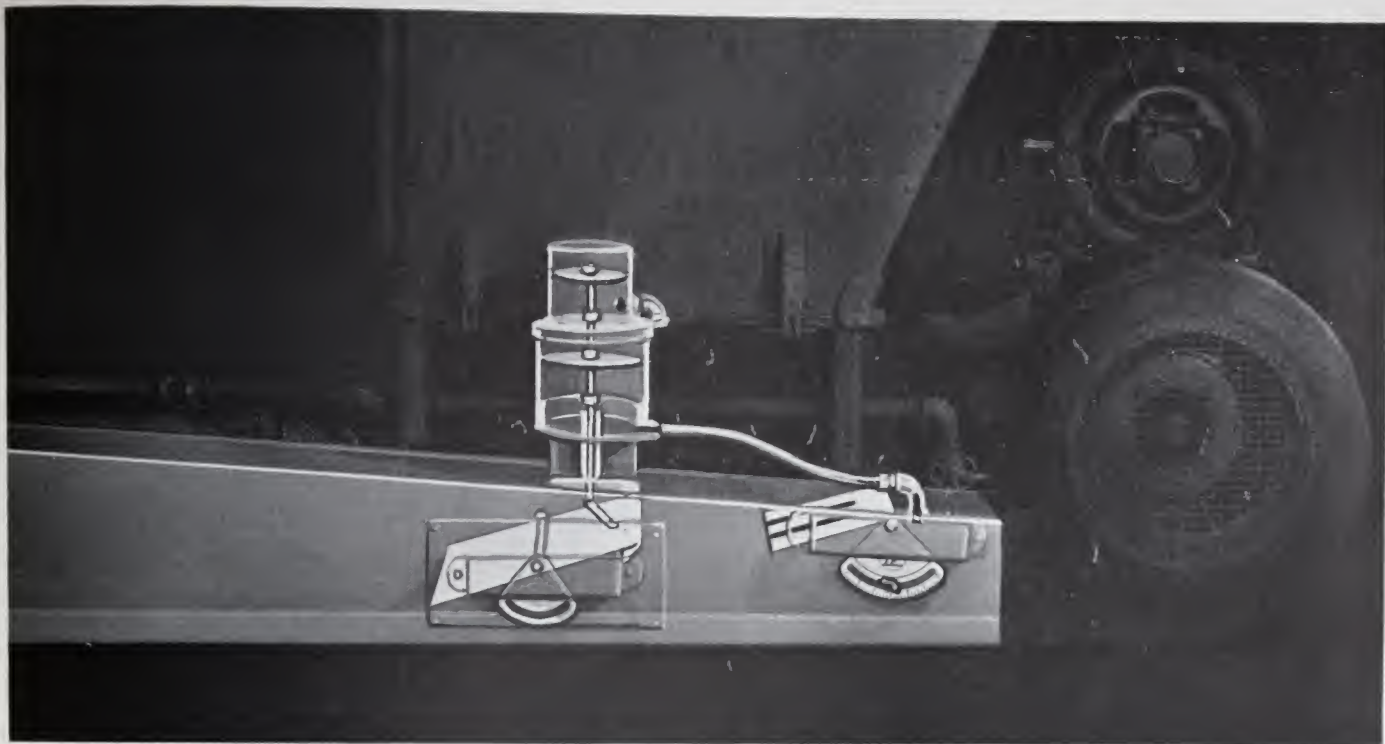
The worm flights are spaced more closely at the hopper end where the coal is picked up by the worm, and widen as they approach the retort. This prevents coal from packing in the worm, insures its delivery to the fire box in loose condition, and greatly reduces the amount of power necessary to feed the coal to the retort.

At the base of the hopper, on the side nearest the boiler, is a worm clean-out, and a "spike grabber," which automatically stops any piece of foreign matter which might cause trouble in the feed worm. The construction of an



A TIGHTLY PACKED FIRE CANNOT BREATHE
Fuel that is not properly aerated makes a smoking, inefficient fire.

Iron Fireman stoker is similar to that of a fine automobile or motor truck. Experience has proved that this type of construction enables the Iron Fireman to operate with less maintenance cost, and with longer life than machines of bulky and more or less clumsy construction.



Iron Fireman Volumeter

Regulates air supply to the needs of the fire as automatically as the human lung regulates air supply to the needs of the human body

Supplies exactly the amount of air needed for perfect firing regardless of varying conditions of fuel and fuel bed

THE secret of fuel carburetion for good firing is the same as the secret of fuel carburetion for good gas engine performance. It means the mixing of the fuel with just the right amount of air. Too much air makes the mixture too "lean" and it will not deliver power. Too little air makes the mixture too "rich"; it chokes up the motor and gives out a black smoke. The same conditions apply to firing a boiler or furnace, whether the fuel be coal, gas, or oil. The proper "carburetion" of coal—that is, mixing it with air in just the right proportions, presents an unusual problem because of varying conditions in the fuel bed and in the types of coal used. A steady air pressure which is just right for a 10-inch fuel bed of a certain type of coal may actually force too much air through a 5-inch

fuel bed of the same coal. A coking coal requires more air pressure to force the same volume of air into the combustion zone than is required by a free-burning coal. Constant air volume actually delivered into the combustion zone is the desired result which the Iron Fireman Volumeter accomplishes.

Through an ingenious development in the Iron Fireman engineering department, utilizing pneumatic force from the air supply itself, the Iron Fireman Volumeter now solves this important problem. The Volumeter maintains a constant air volume. Regardless of fuel bed conditions or the type of coal used, it always will give the volume of air for which it is set, automatically regulating it to compensate for varying depths of fuel bed or other changes, even though the type of coal or other factors may vary.

Quality in Design and Construction Characterize Iron Fireman

1. PRESSED STEEL CONSTRUCTION



Pressed steel construction is as superior for stokers as it is for bridges, coal cars or locomotives. This construction is strong, light and crack-proof, largely because of the inherent advantages of this uniform material and the method of fabrication. Iron Fireman utilizes this construction wherever possible, and through large volume production on standardized parts and assemblies, has been able to bring in to the heavy duty stoker field the same type of high quality, long life and effective performance which characterizes the modern motor truck and tractor in their field.

2. BALANCED DESIGN

The success of any machine is based upon the successful performance of every one of its parts. Like a chain, no machine is stronger than its weakest link. Every unit of the Iron Fireman is not only balanced and perfected in itself, but is also balanced in its relation to the other parts, and to make the complete stoker a well balanced operating unit. Balanced design permits a flexibility of adjustment which is an important factor in proper installation.



3. SILENT, POWERFUL CONTINUOUS FEED TRANSMISSION



The Iron Fireman speed reduction unit and its patented speed change gears are an exclusive Iron Fireman development. This transmission drives the feed worm at a constant speed which in turn feeds the coal to the fire in a slow, steady stream at the required rate for proper burning. As a result, a steady, non-agitated fire is obtained. This transmission has three speeds and three neutrals. The gears can be shifted while the stoker is in operation, in fact more easily than when the stoker is idle, and it is impossible to strip the gears while shifting. All the gears operate in a bath of lubricating oil and the unit is most quiet. In design, materials, and method of construction, the Iron Fireman transmission is like that of a fine automobile. This unit is a precision mechanism, made from fine materials. Long life is its inherent characteristic.



4. OVERLOAD SAFETY

Emergencies occasionally arise which call for an overload device on a stoker, a railroad spike is sometimes thrown into the coal hopper with the coal, finds its way into the feed worm, and may become lodged at the entrance to the worm housing. In such cases a safety shear pin automatically shears, thus giving positive protection to the stoker mechanism. It is a simple matter to remove the railroad spike or other foreign object. The safety shear pin serves the same basic purpose as the ordinary fuse plug in an electrical circuit and it is just as easy to replace. While this simple overload device may never be needed, it continually stands guard against costly breakage and resulting boiler shutdown.



5. SHEAR PIN ALARM

For hospitals, greenhouses, or other applications where the stoker may be left running for a considerable length of time without an attendant and where immediate attention must be called when an interruption occurs, the shear pin alarm is a valuable safety. It stops the stoker and announces the interruption with bells or lights. As the stoker stops, it automatically banks the fire and holds the fuel bed ready for resumption of service.



6. QUICK FEED LINE CLEAN-OUT

Foreign matter which may find its way into the coal and obstruct the operation of the stoker is led up to the worm housing clean-out, from which position it can be readily removed without damage to the stoker or delay to the operation. The worm housing cleanout is standard equipment on all sizes of Iron Fireman automatic coal burners. Its use may never be required, but the very presence of this feature in Iron Fireman construction means an additional safety device standing guard over continuous stoker operation.



7. HINGED STEEL HOPPER

The Iron Fireman hopper is made of heavy duty steel plate. It is shaped to facilitate free flow of coal to the feed worm. These hoppers are attached to the hopper base by specially designed hinges. By simply driving out the hinge pins on either or both sides the hopper may be quickly and easily removed or swung to one side or the other, as may be desired.



Iron Fireman Stoker Fire Doors



Low Clearance Fire Doors closed.



Low Clearance Fire Doors open.

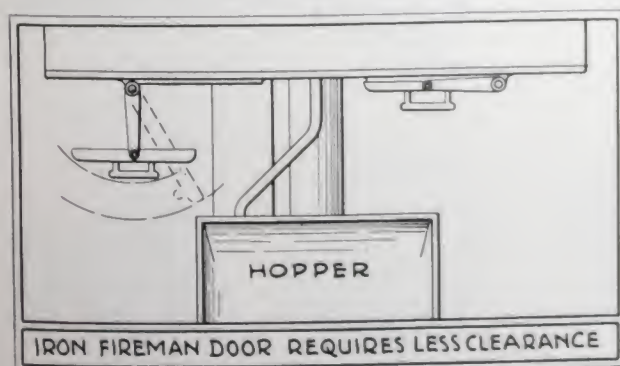
The proper installation of a stoker has much to do with its satisfactory operation. The Iron Fireman Manufacturing Company works very closely with its field engineers, dealers, and service men, to the end of making each Iron Fireman installation not only a sound piece of engineering, but a satisfactory one to work with, so that the man in charge of the boiler room can achieve the best possible results with the smallest expenditure of time and effort. Iron Fireman stoker fire doors were developed as a result of this policy. They are a patented Iron Fireman accessory.

TWO TYPES OF IRON FIREMAN STOKER FIRE DOORS

These fire doors are made in two types, as shown in the illustrations on this page, i.e. the standard fire doors, and the low clearance fire doors.

SWING OF DOORS

One of the primary objects in the design of these doors was to swing them so that they can be opened with a minimum amount of clearance



between the boiler front and the hopper. Often proper installation requires that this space be very limited. Another feature of the swing of these doors is that the front of the door is always facing the operator so that he is never exposed to the radiant heat from the door baffle.

DOOR MOUNTINGS

The hinges of these doors are so designed that there is always a tendency for the doors to close. This tendency, in addition to the latch at the bottom of the door, makes for complete closing. The door frames are mounted on steel plates which are furnished as a part of the complete unit of two doors and a plate. These doors may be pivoted so that they swing outward, or they may be mounted so that they will both be pivoted at the center of the boiler setting and swing toward the hopper.

BAFFLES

The baffles for fire doors are subjected to extremely heavy duty. They must withstand high temperature and must also be portable, inasmuch as they swing with the doors. The construction and materials going into the baffles of Iron Fireman stoker doors are the result of careful design and specification, backed by laboratory tests and actual field experience. As a result they are giving the greatest of satisfaction and service.

LOW CLEARANCE FIRE DOORS

The low clearance fire door is designed for stokers in pit settings, for only a small height is obtainable from the water leg of the boiler to the dead plate of the stoker. In such cases, the maximum amount of cleaning space is needed, and all available space must be utilized. These doors as will be seen from the illustration, need a center, and there is no pier or door frame between. When open, they make available adequate cleaning space, even though the height is at the minimum.

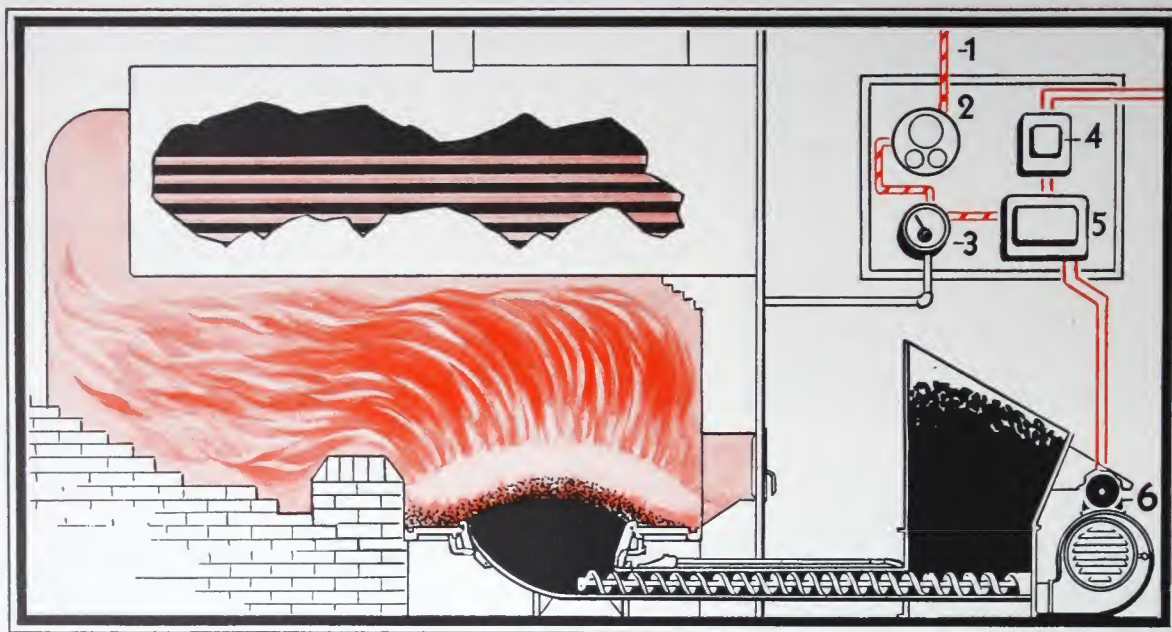


Standard Iron Fireman Fire Doors closed.



Standard Iron Fireman Fire Doors open.

YOUR IRON FIREMAN INSTALLATION IS

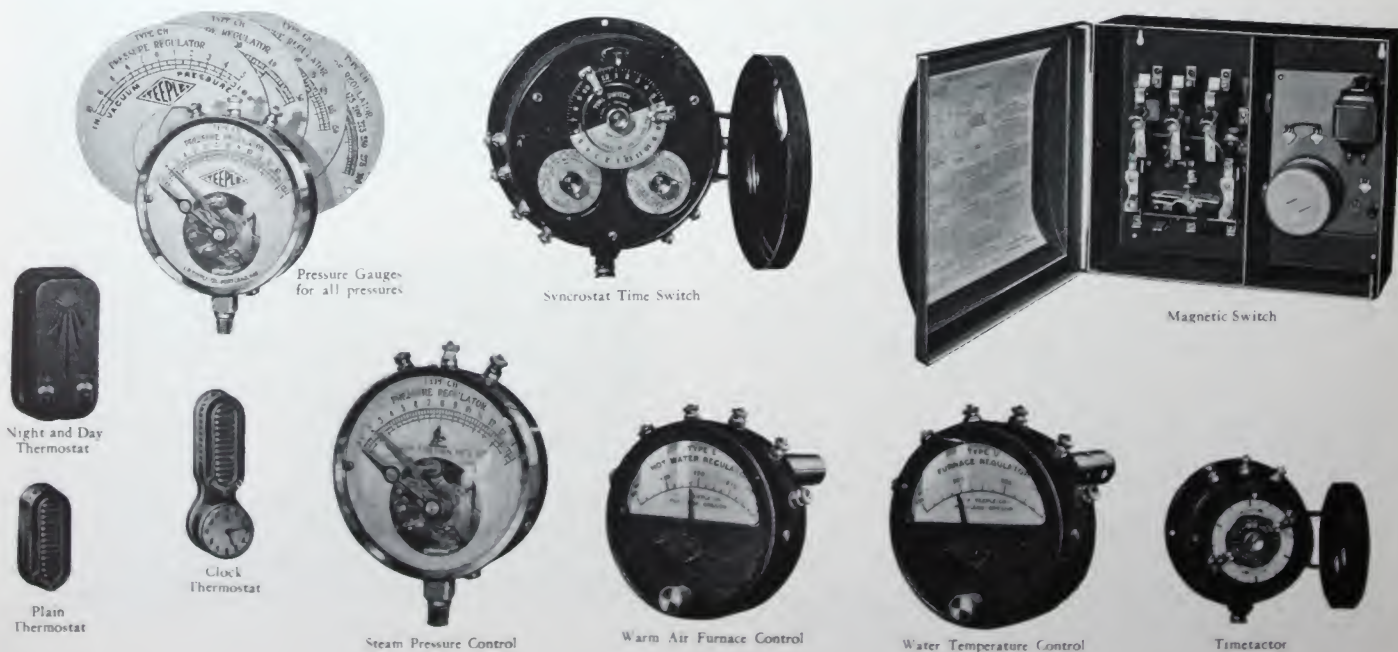


This cross-section illustrates a typical Iron Fireman installation in a heating boiler. The control instruments shown are: (1) To Duplex Thermostat; (2) Syn-crostat Time Switch; (3) Pressure Regulator; (4) Line Switch; (5) Magnetic Switch and Relay; (6) Motor.

A Complete Line of Exclusive Iron Fireman Automatic Instruments to Control and Safeguard Stoker Operation

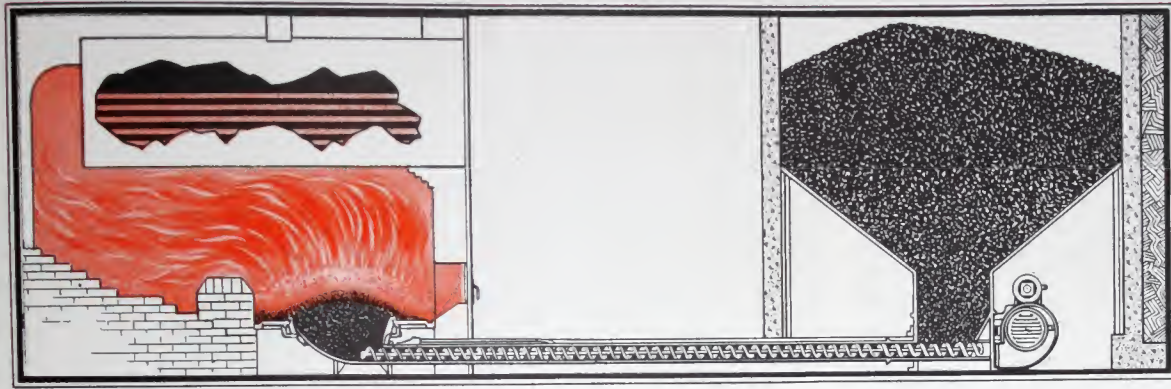
Ease of installation and simplicity of operation are characteristic of Iron Fireman equipment. Their proper performance does not require the constant attention of an engineer, whose time is thus available for other duties. Efficiency of Iron Fireman firing, due to proper feeding,

correct fuel bed distribution, proper aeration and dependable mechanical operation, greatly increase the range of usefulness of the heating boiler, in many cases enabling one boiler to do the work of two, or averting the necessity of adding another boiler to take care of increased demand.



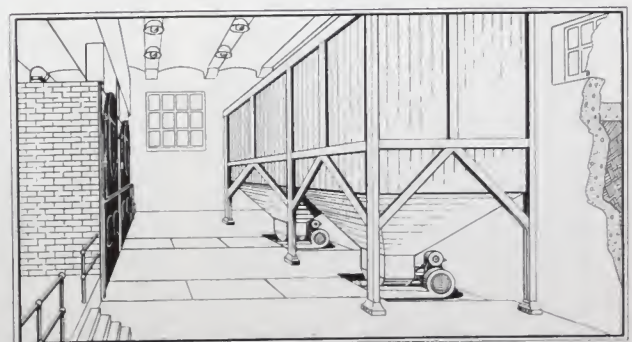
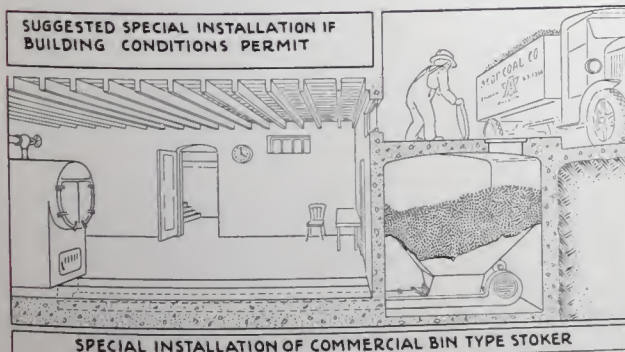
ENGINEERED TO YOUR OWN FIRING JOB

Bin and Bunker Feed Models in All Sizes

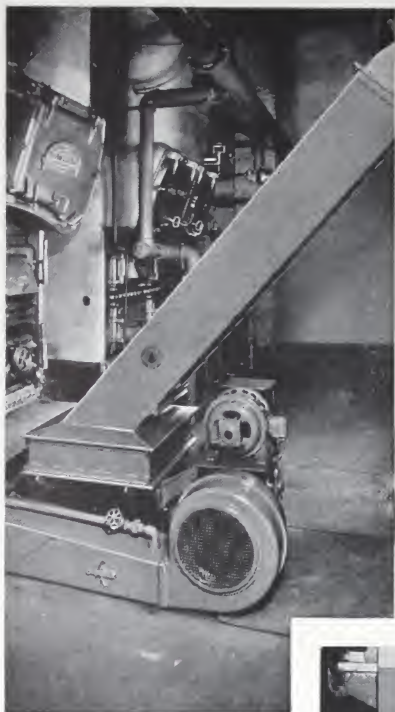


All sizes and types of Iron Fireman burners are available in models which feed directly from the coal bin or bunker to the fire

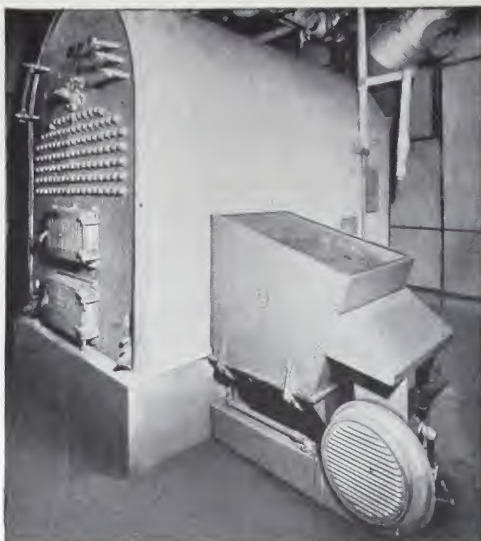
● Bunker feed Iron Fireman stokers represent the ideal in modern boiler room design. Coal is delivered directly to the bunker, then fed directly to the fire without handling. A bunker feed installation reduces to a minimum the attention which the fireman must give to a stoker; it makes a clear space in front of the boiler and freedom for cleaning the fire; it insures an ample supply of coal to carry the heating or power plant over a considerable period. An Iron Fireman bunker feed model is the most economical type of complete coal conveying and burning system.



Multiple installation of bunker type stokers



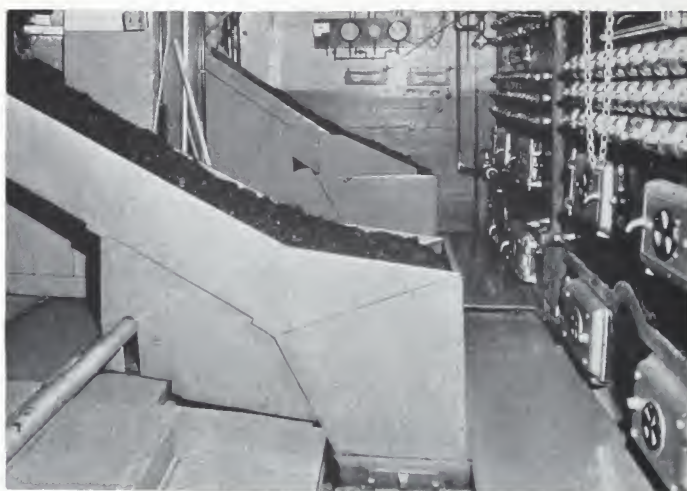
KANAWHA VALLEY BUILDING, Charleston, W. Va. Fuel cost saving of 48% when Iron Fireman replaced gas. One boiler equipped with Iron Fireman carries the entire heating load.



BOWLES LUNCH LIMITED, Toronto, Canada. Seventeen Iron Fireman installations, 12 of which replaced oil with annual fuel cost savings of \$9360 or 60%.



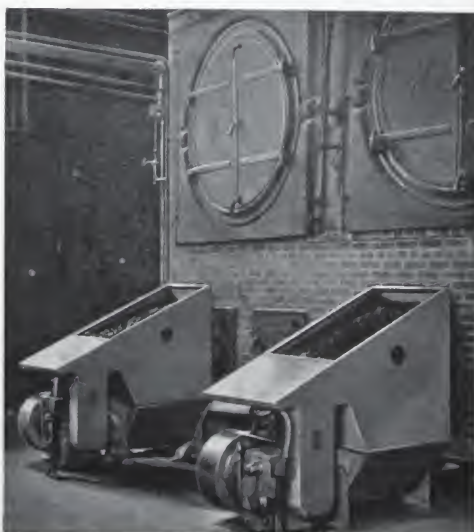
UNIVERSITY CLUB, Cleveland, Ohio. Iron Fireman stokers replaced gas. Fuel cost savings approximately \$250 a month.



Left: WELLINGTON ARMS HOTEL, Chicago, Illinois. Iron Fireman stokers replaced oil. Fuel cost savings of \$63,000 in seven years of Iron Fireman operation.



COOPER-BESSEMER CORP., Grove City, Pa. Six Iron Fireman stokers installed in pairs in 3 boiler rooms heat 29 buildings covering 12 acres of floor space. Annual fuel cost saving over hand-firing \$4632 or 47%.



LIBERTY BAKING CO., Pittsburgh, Pennsylvania. Two heavy duty Iron Fireman stokers firing 100 h.p. H.R.T. boilers, 75 pounds pressure. Replaced hand-firing. Annual fuel cost saving \$2830 or 43%.



BRADLEY WASHFOUNTAIN CO., Milwaukee, Wisconsin. Iron Fireman replaced oil. Machine more than paid for itself from fuel savings in first year of operation. The second year it earned its owners \$1147.80.

AN IRON FIREMAN FOR EVERY JOB

from Residential Furnaces up to Boilers Developing 500 b. p.

COAL FLOW

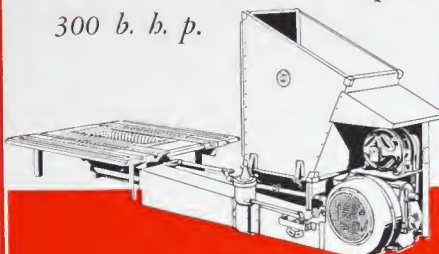
For Residences and Small Boilers

NO COAL TO HANDLE



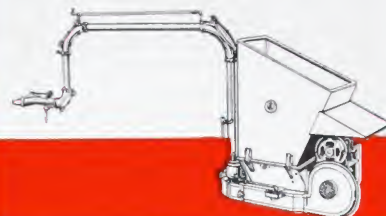
POWERAM

*For Power Installations up to
300 b. b. p.*



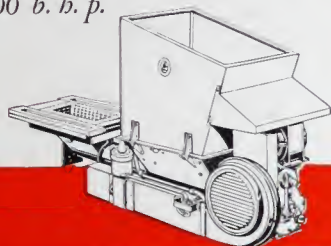
THE PNEUMATIC SPREADER

For Installations up to 500 b. b. p.



COMMERCIAL

*For Heating Installations up to
300 b. b. p.*



ANTHRACITE

COAL FLOW

(WITH ASH REMOVER)

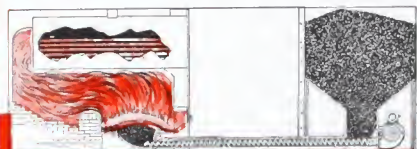
For Residences and Small Boilers



BIN FEED

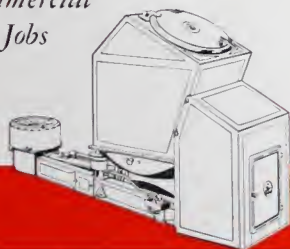
*For Industrial Installations up to
300 b. b. p.*

BOTH POWERAM AND STANDARD COMMERCIAL



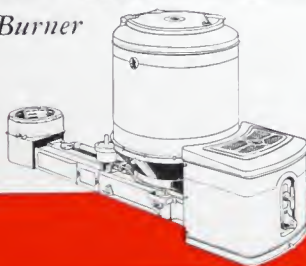
JUNIOR

*For Large Residences or Small
Commercial
Jobs*



MODEL R

*World's Standard Residential
Burner*



COAL FLOW

(RING DRIVE)

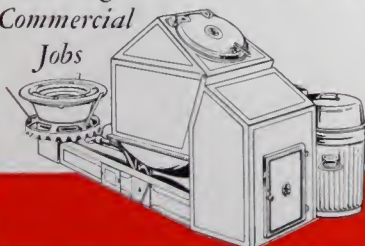
*For Installations Where Space Does
Not Permit Installation of
Regular Coal Flow*



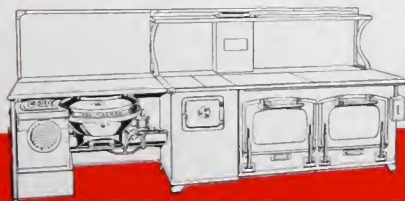
ANTHRACITE

(WITH ASH REMOVER)

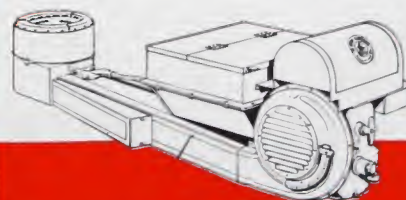
*For Large Residences or Small
Commercial
Jobs*



IRON FIREMAN COAL RANGE BURNER



IRON FIREMAN BAKERY OVEN BURNER





This famous trade-mark is the symbol of

IRON FIREMAN

The machine that made coal an automatic fuel